

PROJECT NUMBER: 2307
PROJECT TITLE: Basic Flavor Investigation
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I. BASIC FLAVOR INVESTIGATION:

A. Objective: To develop basic and applied knowledge for the purpose of flavor improvement or modification of existing products and to provide the basis for development and application of flavor technology for new, unique products.

B. Status:

1. ART:

Several impact enhancers evaluated, with some success, including: botanicals, tobacco extract fractions and flavor chemicals.

Pyrolysis/HRGC/sniffing evaluation of Size Exclusion Chromatography Fractions of Tobacco Extracts: Peak I, II and III of E33 Bright Extract, Peak I and II of C34 Burley Extract, completed. The system consists of: Pyroprobe 120 pyrolysis unit, HP 5880 GC, CP Sil 5CB 10m*0.53mm ID column, open split 1:1 to FID detector and sniffing port.

Summary of findings:

- Peak I and II, regardless of provenience, are very similar in HRGC and odor profiles.
 - Pyrolysis temperature: 650°C or 900°C yields practically identical odor profiles and very similar HRGC profiles.
 - Peak I yields at pyrolysis a significant number of mercaptan-like peaks and a sizable number of smoky-phenolic peaks.
 - Peak II releases a whole gamut of pyrazinic peaks and many smoky-phenolic peaks and has the highest intensity relative to sample size.
 - Peak III, the weakest overall, yields mainly pyrazinic peaks.
 - Peak II, Bright or Burley, appears to be the most promising for use as flavor enhancer.
- This work has relevance for other projects, like Low Tar/High Flavor and others.

2. Low Tar/High Flavor:

The subjective evaluation of model cigarettes with various ventilation levels is completed. A summary of findings is being prepared.

II. ANALYTICAL SUPPORT:

A. **Objective:** To provide analytical support for activities related to development and application of flavoring materials.

B. **Status:**

1. **External Analytical Support:**

Six samples of filler analyzed for anethole content. Training of a technician provided for anethole in filler analysis, in expectation for CTS to provide this analysis in near future.

2. **Cartier:**

Volatiles in box end caps determined for supplier qualification.

3. **Analytical Support:**

GC profiles of flavor 75-644.

GC profile of "Brasway" menthol, compares favorably to Brazilian menthol.

Headspace GC/MS and GC/IR of four samples of extruded tobacco.

Headspace/GC for residual solvents in 2 samples of St. John's Bread extracts.

Casings (3), flavor concentrates (2) and A/C flavor (1) analyzed by GC and HPLC for major components.

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